

Date: Wednesday, 12/13/2006 2:46:53 PM  
 User: Kim Johnston

## Process Sheet

Customer	CU-DAR001 Dart Helicopters Services	Drawing Name	: TUBE ASSEMBLY
Job Number	: 29930	Part Number	: D2003011
Estimate Number	: 10000	Drawing Number	: UNDER REVIEW
P.O. Number	: N/A	Project Number	: N/A
This Issue	: 12/13/2006 S.O. No. : N/A	Drawing Revision	: B
Prsh Rev.	: NC	Material	: N/A
First Issue	: N/A	Due Date	: 1/10/2007
Previous Run	: 28196	Qty:	5 Um: Each
Written By	: <u>JIA</u>		
Checked & Approved By	: <u>OB YL13</u>		
Comment	: Est Rev. B 99.11.11 Re-format EC		

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :	
1.0	M6061T6T0375W035	6061-T6 Tube .375 x.035W	
		Comment: Qty.: 3.5200 f(s)/Unit Total : 17.6000 f(s) Cut: 32.38" long as per Dwg D2003 Material: 3/8" x 0.035" wall 6061-T6 tubing Batch: <u>M19051</u>	FF 07-01-16
2.0	M26506	Firesleeve-crkl .375IDia	
		Comment: Qty.: 3.0525 f(s)/Unit Total : 15.2625 f(s) Firesleeve-crkl .375IDia Cut: 33.31" long as per Dwg D2003 Material: M2650-6 Heat sleeve Batch: <u>M17521</u>	FF 07-01-16
3.0	MS208196D	Sleeve	
		Comment: Qty.: 2.1000 Each(s)/Unit Total : 10.5000 Each(s) Pick: Qty Part Number Description Batch	

Qty	Part Number	Description	Batch
2	MS20819-6D	Sleeve	<u>M103044</u>

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes  No  DQA:  Date: 07/01/18  
QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 12/13/2006 2:46:53 PM  
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Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: TUBE ASSEMBLY

Job Number: 29930

Part Number: D2003011

Job Number:



Seq. #: Machine Or Operation:

Description :

4.0 AN8186D Nut



Comment: Qty.: 2.0000 Each(s)/Unit Total : 10.0000 Each(s)

Pick:

FF 07-01-16

5

Qty Part Number Description Batch  
2 AN818-6D Nut M17651(1) X M103044(5)

5.0 D2182 Heat Shrink



Comment: Qty.: 0.3750 f(s)/Unit Total : 1.8750 f(s)

Pick:

Qty Part Number Description Batch  
1 D2182-045 Heat shrink B15608(4) / m3999x1 FF 07-01-16

5

6.0 SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

1-Form tube as per template D2003-011

2-Assemble as per Dwg D2003

FF 07-01-16

5

7.0 QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

10/01/17 (5)

8.0 PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: S7195

10/01/17 (5)

9.0 QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

10/01/18 (5)

Job Completion



10/01/18 (5)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
07-01-16	6	1 Tube broke at last bending	J	Destroy & Replace	07-01-16 FF			
07-01-16	6	2 Tubing angle bending was off	QSI042	Destroy & Replace	07-01-16 FF	07-01-16 J 07/01/16	QSI042	07-01-16

NOTE: Date & initial all entries



DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO.	REV. B
DATE		D2003	SHEET 1 OF 2
99.06.08		TITLE	
		SCALE	
		206 CABIN HEATER TUBE ASSEMBLIES NTS	
A	90.04.09	NEW ISSUE	
B	99.06.08	UPDATE PER TEMPLATES; ADD P/N'S; 0.025 TUBING NOW 0.035 (TSR1049)	

**RELEASED**

49.06.08 KC

**UNDER REVIEW**

CB

Some flat 06.12.13  
lengths wrong

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WORK ORDER  
NO. 29930

NOTE: FLAT LENGTHS MAY BE  
INCORRECT. BEND TO BENT  
TOOL. REPORT TO ENGINEERING

P/N	TEMPLATE	ON CORRECT FLAT LENGTH <sup>1</sup>	HEATSLEEVE LENGTH <sup>1</sup>	CUT LENGTH OF TUBE <sup>2</sup>	MS20819-8J SLEEVE	AN818-8J NUT	MS20819-8D SLEEVE	AN818-8D NUT	MS20819-6D SLEEVE	AN818-6D NUT	DESC.	MATERIAL <sup>4/8/7</sup>	VENDOR OR SPEC	
D2003-001	T2003-001	5.2	6.00						2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-700/6	
D2003-003	T2003-003	7.3	8.12						2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-700/6	
D2003-005	T2003-005	9.8	10.62						2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-700/6	
D2003-007	T2003-007	20.0	19.63						2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-700/6	
D2003-009	T2003-009	12.38	12.44						2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-700/6	
D2003-011	T2003-011	33.31	32.38						2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-700/6	
D2003-013	T2003-013	12.7	13.54						2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-700/6	
D2003-015	T2003-015	17.2	18.00						2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-700/6	
D2003-017	T2003-017	17.0	16.25						2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-700/6	
D2003-019	T2003-019	9.8	10.62			2	2				TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWV-T-700/6	
D2003-021	T2003-021	N/A	2.25			2	2				TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWV-T-700/6	
D2003-023	T2003-023	4.5	5.33			2	2				TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWV-T-700/6	
D2003-025	T2003-025	9.8	10.60			2	2				TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWV-T-700/6	
D2003-027	T2003-027	7.25	7.38			2	2				TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWV-T-700/6	
D2003-029	T2003-029	17.2	18.00			2	2				TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWV-T-700/6	
D2003-031	T2003-031	14.6	15.38	2	2						TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304	
D2003-033	T2003-033	29.75	29.62	2	2						TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304	
D2003-035	T2003-035	24.7	27.00	2	2						TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304	
D2003-037	T2003-037	24.81	23.38	2	2						TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304	
D2003-039	T2003-039	34.0	34.00	2	2						TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304	
D2003-041	T2003-041	6.0	5.88	2	2						TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304	
D2003-043	T2003-043	11.7	10.75	2	2						TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304	
D2003-045	T2003-045	3.50	2.44	2	2						TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304	
D2003-047	T2003-047	5.56	5.56	2	2						TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304	
D2003-049	T2003-049	33.2	34.00	2	2						TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304	
D2003-077	T2003-077	N/A	6.25						1	1		JET	6061-T6 0.375 OD x 0.035 W	WWV-T-700/6
D2003-101	T2003-101	13.25	13.13						2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-600/6	
D2003-103	T2003-103	12.38	12.00						2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-600/6	
D2003-105	T2003-105	10.75	10.60						2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-600/6	
D2003-107	T2003-107	12.75	12.25						2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-600/6	
D2003-109	T2003-109	8.25	8.125			2	2				TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWV-T-600/6	
D2003-111	T2003-111	4.75	4.625			2	2				TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWV-T-600/6	
D2003-116	T2003-116	4.0									HEATSLEEVE	M2650-20 CRINKLE-SOFT	STRATOFLEX	
D2003-120	T2003-120	4.0									HEATSLEEVE	M2650-16 CRINKLE-SOFT	STRATOFLEX	
D2003-14	T2003-14	4.0									HEATSLEEVE	M2650-14 CRINKLE-SOFT	STRATOFLEX	
D2003-16	T2003-16	4.0									HEATSLEEVE	M2650-16 CRINKLE-SOFT	STRATOFLEX	
D2003-205	T2003-205	9.75	9.60					2	2		TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-700/6	
D2003-207	T2003-207	3.75	3.75					2	2		TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-700/6	

**DART**

DESIGN <i>[Signature]</i>	DRAWN BY <i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D2003	REV. B SHEET 2 OF 2
DATE 99.06.08	TITLE 206 CABIN HEATER TUBE ASSEMBLIES NTS	SCALE	

**RELEASED**  
99.06.08 KE
**UNDER REVIEW**CB  
06.12.13

~~06.08.21 CB~~  
 Some flat lengths  
 and wrong

**Notes:**

- (1) USE STRATOFLEX M2650-6 CRINKLE-SOFT HEATSLEEVE.
- (2) TUBING ASSEMBLIES TO BE CUT AND BENT IN ACCORDANCE WITH TEMPLATES.
- (3) TUBES TO BE FLARED 30° TO MATE WITH FITTINGS MADE TO MS33514.
- (4) ENSURE SEAMLESS TUBING IS USED.
- (5) INSTALL HEATSLEEVE OVER ALL TUBES WITH A DESIGNATED LENGTH OF HEATSLEEVE PER THE PARTS LIST.
- (6) 5052 (WW-T-700/4) TUBING MAY BE SUBSTITUTED WHEN 6061 TUBING IS NOT AVAILABLE.
- (7) 0.049 WALL THICKNESS CRES TUBING MAY BE SUBSTITUTED WHEN 0.035 IS NOT AVAILABLE.
- (8) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.

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